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UNPUBLISHED PRELIMINARY DATA

Semi-annual Progress Report for NSG Grant 567-E

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The following semi-annual report of progress for the sub-project involving biological effects of radiation will be abbreviated due to the fact that funds were not received for this sub-project until mid-January, 1965.

Three experiments on the effects of radiation are being conducted at the present time. All of these experiments were begun with university support and are now being supported through the grant awarded in January of this year. The first of these involves effects of radiation on growth of slash and longleaf pines growing in a uniform stand about nine years of age on the Savannah River Plant in Aiken, South Carolina. About 200 of these trees are being measured with respect to terminal and lateral growth and two growth measurements have been made to date, one prior to irradiation and one six months after irradiation. The second experiment involves the combined effects of both radiation and drought on loblolly pine seedlings. These plants were irradiated in August of last year and growth measurements are being taken at monthly intervals. It is expected that this experiment will be concluded by early fall of next year. The third experiment involves the combined effects of shading and radiation on loblolly pine seedlings. These plants were irradiated in January and monthly measurements of growth are being taken. It is expected that this experiment will run for two or three years before completion.

In anticipation of the increased activity this summer, attempts have been made to tissue culture both plant and animal tissues. To date, success has been accomplished with growing one mammalian tissue and approximately six plant tissues. The mammalian tissue was that of Peromyscus, and is believed to be the first time that tissues from this animal have ever been cultured in the laboratory. It is expected that the tissues which grow best between now and the summer will be used as experimental cells for cytological effects of radiation this summer.

All arrangements for the 500 curie cobalt 60 source have been arranged and at the present time the source is being fabricated by Nuclear Materials and Equipment Corp., and the irradiation chamber is under construction in the laboratory that will be devoted to this work.

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